

REMARKS/ARGUMENTS

The Examiner rejected claims 1-20 as anticipated (35 U.S.C. §102(b)) by Lagueux (U.S. Patent No. 6,538,669). Applicants traverse with respect to the amended claims.

Amended claim 1 recites a storage area network (SAN), comprising a plurality of storage devices; a plurality of digital data processors, each having a file system that effects access to one or more of the storage devices coupled to the SAN; and a process in communication with the digital data processors, wherein the process responds to a notification from one of the digital data processors requesting extension of the file system at the requesting digital data processor in accordance with a hierarchically defined file extension policy, wherein the hierarchically defined extension policy indicates a hierarchical arrangement of groups of attributes for configuring the extension of the file system, and wherein the process adds storage to the file system of the requesting digital processor to implement the request for the extension of the file system according to the attributes in the at least one group of attributes associated with the requesting digital data processor.

Applicants amended claim 1 to make formatting corrections and to add the requirement that the hierarchically defined extension policy indicates a hierarchical arrangement of groups of attributes for configuring the extension of the file system, wherein the digital data processors are associated with at least one group of attributes. These added requirements are disclosed on pages 127-132 of the Application.

The Examiner cited col. 5, lines 20-21 of Lagueux as disclosing the claim requirement of the process responding to a notification on behalf of at least a selected one of the digital data processors for extension of the file system in accord with a hierarchically defined file extension policy. (Office Action, pg. 2) Applicants traverse.

The cited col. 5 mentions that a SAN can be used to provide storage services. Nowhere does this cited col. 5 anywhere disclose or mention extending a file system in a SAN with a hierarchically defined file extension policy as claimed.

The Examiner further cited col. 7, lines 50-52. The cited col. 7 discusses a LUN that specifies a subcomponent of a target ID. Nowhere does this cited col. 7 anywhere disclose or mention extending a file system in a SAN with a hierarchically defined file extension policy.

The Examiner further cited col. 6, line 14 and col. 24, line 12 of Lagueux with respect to the claim requirements. (Office Action, pg. 3) The cited col. 6 mentions that a server may have application specific processors and col. 24 mentions that a user launches a storage manager

routine that displays an image of storage elements. FIG. 22 shows a hierarchical display of storage elements, such as the storage capacity at different storage elements, such as LUNs, disks, etc. Although the cited Lagueux discusses displaying a hierarchical arrangement of storage elements, nowhere does the cited Lagueux anywhere disclose or mention extending a file system in a SAN with a hierarchically defined file extension policy. The display of hierarchically arranged storage elements such as in the cited FIG. 22 is different from and does not disclose the claimed hierarchically defined extension policy indicating a hierarchical arrangement of groups of attributes for configuring the extension of the file system, wherein digital data processors are associated with at least one group of attributes. Display of physical storage space is different from groups of attributes defining a policy used to configure extensions to file systems in response to notifications from one of the digital processors.

Accordingly, amended claim 1 is patentable over the cited art because the cited Lagueux does not disclose all the claim requirements.

Claims 2-4, and 6 are patentable over the cited art because they depend from claim 1. Moreover, the following dependent claims provide additional grounds of patentability over the cited art.

Amended claim 2 depends from claim 1 and further requires that the groups of attributes include a first group at a first hierarchical level and a second group at a second hierarchical level, wherein the first hierarchical level is hierarchically above the second hierarchical level, and wherein the requesting digital data processor is in the first and second groups, and wherein the first group includes at least one digital data processor other than the requesting digital data processor.

Applicants amended claim 2 to clarify the requirements.

The Examiner cited col. 24, line 12 of Lagueux as disclosing the requirements of claim 2. (Office Action, pgs. 3-4) Applicants traverse.

The cited col. 24 discusses a hierarchical display of storage elements. As discussed, the cited display of storage elements is different from and does not disclose hierarchical groupings of attributes to extend a file system by adding storage space. Nowhere does the cited col. 24 disclose the additional requirements of claim 2 concerning how the digital data processors may be associated with different groups of attributes used to configure file system extensions.

Accordingly, claim 2 provides additional grounds of patentability over the cited art because the cited art does not disclose the additional requirements of this claim.

Amended claim 3 depends from claim 1 and further requires that the first group is associated with a first set of file extension configuration attributes defining a default policy for digital data processors associated with that group and wherein the second group is associated with a second set of one or more file extension configuration attributes, wherein a definition of an attribute in the second set overrides a definition for that attribute in the first set, wherein the configuration attributes of the second set, taken in conjunction with non-overridden configuration attributes of the first set, define a policy for the second group. The process configures the file extension on behalf of the requesting digital data processor using the attributes defined for the second group.

Applicants amended claim 3 to clarify the claim language.

The Examiner cited col. 7, lines 20-30 of Lagueux as disclosing the requirements of claim 3. (Office Action, pg. 4) Applicants traverse.

The cited col. 7 discusses a management interface for managing an ISAN server. The management interface contains rule based management of the system including scheduling, process orchestration, handling processes and events, etc. One module provides rules for configuring and maintaining the ISAN server.

Although the cited col. 7 discusses rules for configuring the ISAN server, nowhere does the cited col. 7 anywhere disclose the claim requirements concerning a hierarchical file extension policy including extension including a first group of configuration attributes defining a default policy for digital data processors associated with that group and a second group having a second set of one or more file extension configuration attributes. Nowhere does the cited col. 7 anywhere disclose or mention the claimed details of a hierarchical file extension policy providing attributes used to configure a requested file extension for a digital data processor.

Accordingly, claim 3 provides additional grounds of patentability over the cited art because the cited art does not disclose the additional requirements of this claim.

Claim 4 depends from claim 2 and further requires that the attributes are a member of the set of attributes comprising a utilization threshold above which file system extension is requested, one or more storage devices accessible for file system extension, a range of storage capacities for accessible storage devices to be assigned for file system extension, maximum file system size, a flag indicating whether file system utilization is monitored, and an alert interval for notifying a SAN administrator of a file system utilization exceeding a threshold since a previous notification.

Applicants amended claim 4 for clarification purposes and to add the requirements of canceled claim 5.

The Examiner cited col. 6, lines 57-58 and col. 8, line 51 to col. 9, line 2 of Lagueux as disclosing the additional requirements of these claims. (Office Action, pgs. 4-5) Applicants traverse.

The cited col. 6 discusses software modules to support configuration in a SAN. The cited cols. 8-9 discusses storage routing such that the ISAN server can be added to the SAN between a server and storage to provide new functionality. The ISAN server acts as a storage router for storage transactions, and can direct backups and archiving. The ISAN server can migrate data to a new array when a new drive is added.

Although the cited cols. 8-9 discuss how an ISAN server can migrate data in a new array brought into the network, nowhere does the cited cols. 8-9 disclose the specific attributes used to configure storage added to extend a file system, where the attributes have a hierarchical arrangement.

Applicants amended claim 6 to clarify that the attribute is a member of the set of configuration attributes.

Applicants canceled claims 7-15.

Applicants amended claim 16 to include the requirements of claim 1 in a method form. The Examiner cited the same sections of Lagueux cited against claim 1 (Office Action, pgs. 13-14). Applicants submit claim 16 is patentable over the cited art for the reasons discussed with respect to claim 1.

Claim 17 is canceled.

Amended claim 18 was amended to include the requirements of amended claim 4 in method form and thus provides additional grounds of patentability over the cited art for the reasons discussed above with respect to claim 4.

Claims 19 and 20, which depend from claim 16, provide further details on the hierarchical arrangement of groups and thus provide further grounds of patentability over the cited Lagueux, which does not disclose a hierarchical file extension policy.

Applicant added claim 21, which depends from claim 16, and includes the requirements of claim 2 in method form. Claim 21 is patentable over the cited art for the reasons discussed with respect to claim 2.

Added claims 22, 26, and 32 depend from claims 1, 16, and 29 and further require that digital data processors associated with one group of attributes are also associated with all groups of attributes at hierarchically higher levels than the group with which the digital data processor is associated.

The additional requirements of these claims are disclosed on pages 127-132 and FIG. 33 of the Application.

Applicants submit that claims 22, 26, and 32 are patentable over the cited art because they depend from claims 1, 16, and 29, which are patentable over the cited art for the reasons discussed, and because their additional requirements in combination with the base claims provide further grounds of patentability over the cited art.

Added claims 23, 27, and 33 depend from claims 1, 16, and 29 and further require that the attributes the process uses to configure the file extension for the requesting digital processor include attributes in the at least one group associated with the requesting digital processor, wherein a definition of one attribute at a lower hierarchical level is used over a definition of the attribute at one higher hierarchical levels.

The additional requirements of these claims are disclosed on pages 127-132 and FIG. 33 of the Application.

Applicants submit that claims 23, 27, and 33 are patentable over the cited art because they depend from base claims 1, 16, and 29, which are patentable over the cited art for the reasons discussed, and because their additional requirements in combination with the base and intervening claims provide further grounds of patentability over the cited art.

Added claims 24, 28, and 34 depend from claims 1, 16, and 29 and further require that at least one group comprises a host group policy defining attributes for configuring an extension to all file systems within each digital data processor associated with the host group policy, and wherein at least one group comprises a file system policy defining attributes for configuring a specified file system within each digital data processor associated with the file system policy. The additional requirements of these claims are disclosed on pages 127-132 and FIG. 33 of the Application.

Applicants submit that claims 24, 28, and 34 are patentable over the cited art because they depend from base claims 1, 16, and 29, which are patentable over the cited art for the reasons discussed, and because their additional requirements in combination with the base claims provide further grounds of patentability over the cited art.

Claim 25 depends from claim 21 and includes the requirements of claim 3. Applicants submit that claim 25 is patentable over the cited art for the reasons discussed with respect to claim 3.

Claims 29-31 include the requirements of claims 16, 18, 21 in computer readable format form and thus are patentable over the cited art for the reason discussed with respect to claims 16, 18, and 21.

Conclusion

For all the above reasons, Applicant submits that the pending claims 1-4, 6, 16, and 18-34 are patentable over the art of record. Applicants submit herewith the fee for the claim amendments. Nonetheless, should any additional fees be required, please charge Deposit Account No. 09-0466.

The attorney of record invites the Examiner to contact him at (310) 553-7977 if the Examiner believes such contact would advance the prosecution of the case.

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